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EDITORS' TABLE.

EDITORS: E. D. COPE AND J. S. KINGSLEY.

THE principal object of the International Congress of Geologists is the unification of geological methods. This means the adoption of a general system of nomenclature for formations and a system of coloration for maps. The utility of such a project cannot be questioned. Diversity in the practices of different countries on these points is as inconvenient as it is unscientific. It is not a matter of prime importance what names or what colors are used, but it is important that these should be uniform for the world. Two objections have been made to this project. One of these is that there is not identity, properly so called, between the geological formations of the different continents. The other is, that no system adopted under our present knowledge is adapted to express discoveries yet to be made in unexplored regions.

To the first of these so-called objections it may be replied that, since time is one, so geological ages are one for all parts of the earth. Vast tracts of sediments and intrusions have been produced contemporaneously in the past, as they are being now produced in the present. When these formations are identified as contemporaneous they should receive identical names, and be identically colored on geological maps. Of course, the beginnings and ends of the processes of deposition have not been always contemporaneous; so that we have, in variations of this kind, ground for subdivisions of minor extent and importance. But the great "time boundaries"—as they are well termed by Professor Dana—are identical in their central features for the whole earth. The parallelism may be even traced to a lesser grade of divisions, as is well known. It is only in what might be termed the third grade of time divisions based on stratigraphy, that we begin to find identifications impossible. So, of course, the work of the Congress can proceed no further in this direction.

It can, however, digest and codify the results of geological research in all countries to its lowest subdivisions. It can catalogue and compile. Thus an invaluable index to all the formations of all countries may be produced. Such a list, like all

others of the kind, would have to be continually enlarged by new accessions, as in all other departments of science. Thus is answered the second of the objections above referred to.

The above remarks apply both to a system of nomenclature and to a system of coloration. Major J. W. Powell, of the United States Geological Survey, has entered a protest against the adoption of the system of colors generally in use, and has endeavored to secure the adoption of one of his own devising. The following is an extract from a letter which was presented to the last Congress—that of Berlin[1]—by Major Powell:

"It will be observed that in its fundamental principles this system (that in use by the United States Geological Survey) is the antithesis of that in common use (and represented by the European map). With the evolution of geologic science there grew up a system of symbolic, and sometimes denominative, conventions for the representation of geologic phenomena, in which the conventions are designed to suggest the characters and relations of the phenomena. It implies a classification of the phenomena in which each element is properly correlated with each other element, and in which the sum of the recognized elements forms a complete and symmetric whole. In view of the manner in which scientific classification is effected, it involves conference among geologists concerning obscure and doubtful points, in order that a consensus of opinion may be secured; and it requires modification of classification and consequent repetition of conference with each important geologic discovery. Though natural and simple in its inception, the fully developed system is highly artificial and cumbrous. In the system here advocated, the conventions, both symbolic and denominative, are purely arbitrary. No classification save a semi-arbitrary allocation of the grander divisions of the geologic column is necessarily implied in this system, but any classification may be adopted without affecting its integrity; it affords the means of immediately representing new discoveries, and of either tentatively or finally distinguishing phenomena of doubtful significance; and it permits modification of classification, the maintenance of diverse classifications, and the development of classificatory theories at all stages of investigation. Though resting on a partly artificial basis, it is simple and natural in its application.

"The old system is ideographic, connotative, and analytic; the new is alphabetic, denotative, and synthetic; the old system trammels the observer by prescribing rules to which his obser-

[1] The Work of the International Congress of Geologists, and of its Committees, by Dr. P. Frazer, Secretary of the American Committee, 1886, p. 107.

vation must conform, while the new encourages originality by allowing the utmost latitude in expressing the results of observation; the old system tends to retard the development of geologic science, and to restrict its practical application by explicitly postulating its completeness, while the new promotes geology and extends its useful applications by providing the means of expressing discoveries in new as well as in old lines of investigations."

This letter, so far as we understand it, postulates both the objections we have mentioned above, and which we have shown to be groundless.

The Congress of Berlin did not think it advisable to change the system of coloration which had been, in its main features, in use for half a century, and the American Committee has accepted its decision. In this the committee has adopted the views of utility generally entertained in Europe. The committee, at its Albany meeting, however, expressly insisted on the necessity of incorporating into the general system all new and additional details to be derived from the explorations conducted in non-European countries, thus providing for the contingency referred to by Major Powell in the letter above quoted.

A great deal of labor devolves on the Congress and its committees. Their only reward is the belief that their work is a useful one, and the confidence that, if well done, it will endure, so far as it goes, as a permanent standard of estimation for the entire world, and for all time.

RECENT LITERATURE.

Proceedings of the American Society of Microscopists.[1]— The most notable of the papers read at the Chautauqua meeting of this society were the address of the president, Dr. Thomas J. Burrill, on bacteria and disease; Professor Hamilton L. Smith's contribution to the life-history of the Diatomaceæ; the papers of H. A. Weber and Thomas Taylor on butter and its adulterations, and that of Dr. George E. Fell on *Demodex folliculorum* in diseases of the human face. The first of these is an interesting presen-

[1] Proceedings of the American Society of Microscopists, Ninth Annual Meeting, held at Chautauqua, N. Y., August 10, 11, 12, and 13, 1886. Buffalo, N. Y., 1886, pp. 243, pls. 7.